AMENDMENTS TO THE CLAIMS

1-10. (canceled)

11. (currently amended) A system, comprising:

a processing chamber for performing a process on a workpiece within the processing chamber using at least one processing gas; and

a plasma chamber coupled to the processing chamber for assisting in the analysis of the at least one processing gas, the plasma chamber comprising:

a processing gas inlet port for receiving the at least one processing gas from the processing chamber;

at least one reference gas inlet port for receiving at least one reference gas from at least one reference gas source, wherein the reference gas does not pass through the processing chamber;

a cavity for receiving the at least one processing gas and the at least one reference gas; and

an energy source for exciting the at least one processing gas and the at least one reference gas to form a plasma.

12. (**withdrawn**; original) The system of claim 11, wherein the plasma chamber further comprises at least one probe for measuring the energy of at least one species in the plasma.

13. (original) The system of claim 11, further comprising a spectrometer, wherein the plasma chamber further comprises an optical transmission path for coupling radiation in the plasma to the spectrometer.

14. (original) The system of claim 13, further comprising a computer, wherein the computer analyzes spectral data from the spectrometer.

15. (original) The system of claim 14, wherein the computer modifies the process in response to the spectral data.

16. (original) The system of claim 11, further comprising a computer, wherein the computer controls receiving the at least one reference gas from the at least one reference gas source.

17. (original) The system of claim 11, wherein the plasma chamber further comprises an exhaust line coupled to the cavity.

18. (original) The system of claim 11, wherein the process is selected from the group consisting of deposition and etch.

19. (original) The system of claim 11, wherein the process is selected from the group consisting of a plasma-based process and a non-plasma-based process.

20. (original) The system of claim 11, wherein the plasma chamber is coupled to an exhaust line on the processing chamber.

21. (original) The system of claim 11, wherein the plasma chamber is coupled to the processing chamber via at least a pump or a valve.

22. (original) The system of claim 11, wherein the plasma chamber is directly coupled to the processing chamber.

23. (original) The system of claim 11, wherein the plasma is not used as part of the process.

24-55. (canceled)

56. (**withdrawn**; currently amended) A system, comprising:

a processing chamber for performing a process on a workpiece within the processing chamber using at least one processing gas; and

a plasma chamber coupled to the processing chamber for assisting in the analysis of the at least one processing gas, the plasma chamber comprising:

a processing gas inlet port coupleable to the processing chamber for receiving the at least one processing gas from the processing chamber;

a cavity for receiving the at least one processing gas;

an energy source for exciting the at least one processing gas to form a plasma; and

at least one probe for measuring the energy of at least one species in the plasma.

57. (**withdrawn**; original) The system of claim 56, wherein the plasma chamber further comprises at least one reference gas inlet port for receiving at least one reference gas from at least one reference gas source, and wherein the energy source is further for exciting the at least one reference gas together with the at least one processing gas to form the plasma.

58. (**withdrawn**; original) The system of claim 56, further comprising a spectrometer, wherein the plasma chamber further comprises an optical transmission path for coupling radiation in the plasma to the spectrometer.

59. (**withdrawn**; original) The system of claim 56, wherein the plasma chamber further comprises an exhaust line coupled to the cavity.

60. (**withdrawn**; original) The system of claim 56, further comprising a computer, wherein the computer analyzes spectral data from a spectrometer.

61. (**withdrawn**; original) The system of claim 60, wherein the computer modifies the process in response to the spectral data and the measured energy.

62. (**withdrawn**; original) The system of claim 56, further comprising a computer, wherein the computer controls biasing of the probe.

63. (**withdrawn**; original) The system of claim 56, wherein the process is selected from the group consisting of deposition and etch.

64. (**withdrawn**; original) The system of claim 56, wherein the process is selected from the group consisting of a plasma-based process and a non-plasma-based process.

65. (**withdrawn**; original) The system of claim 56, wherein the plasma chamber is coupled to an exhaust line on the processing chamber.

66. (**withdrawn**; original) The system of claim 56, wherein the plasma chamber is coupled to the processing chamber via at least a pump or a valve.

67. (**withdrawn**; original) The system of claim 56, wherein the plasma chamber is directly coupled to the processing chamber.

68. (**withdrawn**; original) The system of claim 56, further comprising a voltage source for biasing the probe tip, and wherein measuring the energy comprises monitoring a current drawn through the voltage source.

69. (**withdrawn**; original) The system of claim 56, wherein the species is selected from the group consisting of electrons and ionized atoms or molecules.

70. (**withdrawn**; original) The system of claim 56, wherein the plasma is not used as part of the process.

71-97. (canceled)